

## Traci Green

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**From:** John B. King [John.King@bswllp.com]  
**Sent:** Thursday, October 18, 2012 9:45 AM  
**To:** Traci Green; Scott Guilliams  
**Cc:** Sanford Phillips; Smith, David  
**Subject:** Explo - On-Site Handling Approval  
**Attachments:** DRAFT Explo Systems Inc Site Safety Plan Revised 4.pdf

Traci and Scott - First, thank you so much for agreeing to work with Explo on this matter. On-site treatment/destruction of the residues is much safer than off-site transport. Second, as I appreciate it, the plan approved by LSP is attached and the approval, just received, is below. Your concurrence is appreciated. An e-mail reply will be OK with us to get going on this. Thanks, John

-----Original Message-----

**From:** [davidasmith@explosystems.com](mailto:davidasmith@explosystems.com) [<mailto:davidasmith@explosystems.com>]  
**Sent:** Thursday, October 18, 2012 9:38 AM  
**To:** John B. King  
**Subject:** Fw: Clean up and disposal

-----Original Message-----

**From:** [Shelly.Hopkins@dps.la.gov](mailto:Shelly.Hopkins@dps.la.gov)  
**To:** davidasmith  
**Cc:** [John.Porter@dps.la.gov](mailto:John.Porter@dps.la.gov)  
**Subject:** Clean up and disposal  
**Sent:** Oct 18, 2012 9:36 AM

Explo systems has LSP approval for the removal and disposal of hazardous materials from incident 12-06829 provided that actions taken are IAW approved plans, industry standards, and approval by LA DEQ. Logs will be kept for all materials destroyed. Disposal site location will be coordinated with LANG, Camp Minden.

S Hopkins  
Louisiana State Police  
Emergency Services  
337.842.7303

*Done  
10/18/12  
Shelly Hopkins  
LSU  
Camp Minden*

## Traci Green

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**From:** John B. King [John.King@bswllp.com]  
**Sent:** Thursday, October 18, 2012 3:54 PM  
**To:** Traci Green  
**Cc:** Nora Lane; Sanford Phillips; Scott Guilliams; Donelson Caffery  
**Subject:** RE: Explo Systems  
**Attachments:** Explo - Igloo - Clean Harbors Pan.pdf; Explo - Igloo - MSDS Sheet.pdf

Traci - In addition to the written plan just submitted (attached again), I have the following answers provided by Explo regarding your questions.

Description of the open burning process? The open burning process will consist of gathering the material and spreading it over the concrete base of 2464. We will cover the material with a layer of hay and a small amount of diesel fuel. The person in charge will set a fuse line up to the material and ignite the material from a safe distance.

Where is the open burning going to occur? On the slab.

Is the proposed site on a concrete slab? Yes.

Which Unit was affected by the explosion? Please note that it is not a HW permitted unit. Unit 2464, which is not a hazardous waste unit.

Final disposal location of the residue (solid waste landfill?). There will be none left. It will be burned until there is no residue.

Estimate of material to be treated and sent for final disposal. There is about 1,000 pounds. There will be none left. It will be burned until there is no residue.

Estimated time frame for length of activity. 1-4 weeks.

Submit a MSDS or a waste characterization of the material to be treated? See attached MSDS received from Explo.

I apologize for the way this information is coming in. Thanks, John

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**From:** Traci Green [mailto:Traci.Green@LA.GOV]  
**Sent:** Thursday, October 18, 2012 3:00 PM  
**To:** John B. King  
**Cc:** Nora Lane; Sanford Phillips; Scott Guilliams; Donelson Caffery  
**Subject:** Re: Explo Systems

John,

As discussed over the phone,

We need more information on the material, treatment, and disposal for this project.

Thank you,

**Traci Green**  
*Waste Permits Manager*  
Louisiana Department of Environmental Quality  
Phone: (225) 219-3043  
Fax: (225) 219-3158



## **Explo System Incident Report October 18, 2012**

Magazine 2464 had a deflagration/detonation. The material that was stored in this magazine was Ball Powder packed in 35# fiber drums. This was not one of our Permitted Hazardous Materials storage magazines.

Our intent is to walk a defined perimeter of the sight and identify any residual -material that was not consumed in the incident and to collect this material using non sparking tools and return it to the floor (concrete) of magazine 2464 for further treatment. This material will consist of smokeless powder or partially burned smokeless power or packaging that has residual material. This will be accomplished by utilizing a control burn method that will be done periodically as the material accumulates. The treatment of this residual material will be done in accordance with standard industry practices depending on what is recovered.

The trained crews will be walking a pre- established grid pattern and identifying and suspected material. A trained explosives handler will put any identified material into a container for treatment. This operation will continue until all of the area in cleared of any residual material from the incident. Estimated time for entire clean-up operation is 1 to 4 weeks.

All of the crews will be equipped with Personal Protective Gear per the Clean Harbors Plan.

Explo System, Inc

A handwritten signature in black ink, appearing to read "Wm. Terry Wright".

Wm. Terry Wright

Vice President Operations

Clean Harbors

A handwritten signature in black ink, appearing to read "Rexby Stelly".

Rexby Stelly

Field Operations Manager



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### 13.0 SITE SPECIFIC INFORMATION

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Site Name: EXPLO Systems, Inc.

Site Location: Minden Army Depot

Plan Date: 10-17-12

Revision Date: **\*\*\*\*\*THIS IS AN INITIAL DRAFT PLAN PENDING APPROVAL OF APPROPRIATE GOVERNMENT & STATE AGENCIES.**

Project Summary: Remove explosive residue from Magazine fire

To be conducted for EXPLO Systems Inc  
by Clean Harbors Environmental Services Inc. These activities are proposed to include: clean up operations to include removing unburned smokeless powder, explosive residue. Packaging reactive material and prep for transportation. Clean up operations will use will use a grip sweep to cover the area of contamination

This Site Specific Information has been developed from the latest available information revisions and alterations to this plan may become necessary as further information, (i.e., environmental sampling results, changes in site conditions, changes in scope of work, etc.) , is developed or becomes available. Clean Harbors' Director Health and Safety must approve any proposed changes, before the on-site implementation.

All on-site personnel are required to review and comply with this Health and Safety Plan. It is the responsibility of the Project Manager to ensure this plan is implemented.



## 13.1 SITE HISTORY

13.1.1 Nature of Site: This site is currently being used as an industrial manufacturing facility.

_____ Industrial	_____ Commercial
_____ Residential	<u>  x  </u> Rural
	_____ Other (SPECIFY)
	_____
	_____

13.1.2 Use of Site:

_____ Manufacturing (Specify products and duration of plant activities)	_____ Landfill
_____ Residence	_____ TSDF
_____ Maintenance Facility	_____ Gasoline Distributor
	<u>  xx  </u>
	_____ Other (SPECIFY)
	_____ Explosive storage

13.1.3 Reason for Site Mobilization/Activity:

_____ Public Complaints	_____ Agency Authorized Clean-Up
_____ Client Request	<u>  xx  </u> Emergency Response
_____ Previous Site Research/Investigation	
_____ Other (SPECIFY)	

13.1.4 Work Ordered By:

<u>  xx  </u> Client	_____ Government Agency	_____ Other (SPECIFY)
		_____

13.1.5 Nature of Problem:

_____ Uncontrolled Dumping	_____ Leaking Underground Storage Tank
_____ Buried Drums	_____ Spill
	_____ Truck Roll-Over
<u>  Xx  </u> Other (SPECIFY)	
Explosive storage magazine had a mass fire	



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#### 13.1.6 Detailed Site History:

On the evening of October 15<sup>th</sup> 2012 an explosion was reported at the Explo Systems located at Camp Minden which is located in Northwestern Louisiana just outside of the town of Minden, LA. Camp Minden is the site of a former Army ammunition plant. The State of Louisiana took the site over from the federal government in 2005. Explo Systems is a 7-year old, veteran-owned small business located on the former Louisiana Army Ammunition Plant (LAAP). The company specializes in demilitarizing / recovering explosives & propellant. Clean Harbors has been hired to assist in the clean-up resulting from this explosion.



## 13.2 SITE DESCRIPTION

### 13.2.1 General Site Topography:

☐ HILLY ☐ FLAT ☐ MARSHLAND ☒ Other (SPECIFY)  
Heavily wooded area.

### 13.2.2 Affected Area:

☐ URBAN ☒ RURAL ☐ RESIDENTIAL ☐ INDUSTRIAL  
☐ Other (SPECIFY)  
Heavily wooded area

### 13.2.3 Bodies of Water Neighboring Site:

☐ OCEAN ☒ Other (SPECIFY)  
☐ STREAM ☐ RIVER ☐ POND ☐ LAKE ☐ BAY  
Na

### 13.2.4 Approximate Site Size: 1250 feet by 1250 feet

(SPECIFY APPROXIMATE DIMENSIONS IN FEET)

### 13.2.5 Unusual Site Features:

Mass destruction of concrete explosive magazine

(SPECIFY: Process/Utility lines and proximity to site operations; overhead obstructions; Building explosive storage arealocations; Landmarks; etc.)

### 13.2.6 Properties or Operations Abutting (adjacent to) the Site and Current Use: (NOTE: SPECIFY APPROXIMATE DISTANCES TO WORK AREAS)

NORTH: Explosive storage  
SOUTH: Explosive storage  
EAST: Explosive storage  
WEST: Explosive storage



### 13.3 CURRENT SITE STATUS

xx Active            Inactive

#### 13.3.1 Current Site Activities:

CHI OPERATIONS: na

CLIENT OPERATIONS: Explosive storage

GOVERNMENTAL AGENCY OPERATIONS:  
(Specify Agency) Louisiana National Guard Base

ADDITIONAL SITE CONTRACTORS: unknown

### 13.4 SCOPE OF WORK/PROJECT OBJECTIVES

13.4.1 Clean up operations to include removing unburned smokeless powder, explosive residue. Packaging reactive material and prepare for onsite treatment. Clean up operations will use will use a grip sweep to cover the area of contamination.

### 13.5 CONTAMINANTS

#### 13.5.1 Waste Type:

Liquid            Solid x Gas            Sludge            Other           

#### 13.5.2 Waste Characteristics (from Manifest):

CORROSIVE	<u>          </u>	FLAMMABLE	<u>          </u>	EXPLOSIVE	<u>          </u>
COMBUSTIBLE	<u>          </u>	VOLATILE	<u>          </u>	TOXIC	<u>          </u>
REACTIVE	<u>xxx</u>	RADIOACTIVE	<u>          </u>	OTHER	<u>          </u>
UNKNOWN	<u>          </u>				



13.5.3 Containment:

EXCAVATION	_____	LAGOON	_____	BODY OF WATER	_____
TANK	_____	DRUMS	_____	TANK CAR	_____
PIPING	_____	ROLL-OFF	_____	PROCESS VESSEL	_____
SOIL	_____	GROUND WATER	_____	OTHER	<u>  x  </u>

13.5.4 Substances of Concern:

Provide a summary of the chemicals Known (x), or Suspected (S) to be present on-site. Indicate Concentrations by laboratory analysis, exposure monitoring results, bulk samples, etc. found in ppm, ppb, mg/l, ug/l, per cent (%), etc.

CONCENTRATION RANGE OF CHEMICALS FOUND:

X or S

<u>CHEMICAL NAME</u>	<u>SOIL</u>	<u>WATER</u>	<u>AIR</u>	<u>(METHOD<sup>1</sup>)</u>
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Smokeless powder	x				



NOTES: (For 13.5.5)

a - TLV-TWA	ACGIH, Threshold Limit Value - Time Weighted Average
b - TLV-STEL	ACGIH, Threshold Limit Value - Short Term Exposure Limit
c - PEL-TWA	OSHA, Permissible Exposure Limit - Time Weighted Average
d - PEL-STEL	OSHA, Permissible Exposure Limit - Short Term Exposure Limit
e - IDLH	NIOSH, Immediately Dangerous to Life or Health; a maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.
f - A1	ACGIH, Known Human Carcinogen
g - A2	ACGIH, Suspected Human Carcinogen
h - SKIN	This attention-calling designation refers to the potential contribution to the overall exposure through skin absorption, including mucous membranes and eye, either airborne or through direct contact with the substance.
i - CEILING	ACGIH, The concentration that should not be exceeded during any part of the working exposure.



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### 13.5.6 Chemicals Used On-site:

Summarize the chemicals that will be brought to the site and used by CHI Personnel. (Include each product that will be on site, e.g. the decontamination solution, oil/grease for equipment maintenance, etc.). Attach appropriate MSDS in Appendix C.

CHEMICAL NAME	TASK USED FOR	QUANTITY OF CHEMICAL	CONC. OF SOLUTION
unknown			



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### 13.6 KEY PERSONNEL and EMERGENCY NUMBERS

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Indicate Location:

<u>Minden FD</u>	Fire Department. . . 318-371-4232
<u>Minden</u>	Ambulance Service... 318-382-0380
<u>Military Police</u>	Police Department ....318-382-4171
<u>Hotline</u>	State Police .....877-925-6595

CHEMTREC ..... (800) 424-9300

State Poison Control Cent.....

#### NEAREST HOSPITAL:

NAME: Minden Medical Hospital

ADDRESS: 1 Medical Plaza Place  
Minden La 71055

PHONE: 318-377-2321

#### DIRECTIONS TO HOSPITAL FROM SITE:

(NOTE: Provide approximate distances in feet, miles, etc. between landmarks.)

1. Head east on Java Rd
2. Take the 1st left to stay on Java Rd
3. Take the 1st left onto 4th St
4. Continue straight onto Burma Rd
5. Turn right onto US-79 N/US-80 E
6. Turn left onto Lewisville Rd
7. Turn left onto Main St



8. Turn right onto Medical Plaza Pl



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## CLEAN HARBORS OPERATIONS CONTACTS:

Project Manager  
Rexby Stelly

General Manager  
Jerry Mcpheron

PHONE (Cell) 337-256-4007  
(Pager)  
(Home)

PHONE (Cell) 318-401-0666  
(Pager)  
(Home)

## CLEAN HARBORS HEALTH AND SAFETY CONTACTS:

### Site Health and Safety Associate

NAME:  
BRANCH/DIV.  
Telephone: ( )  
PAGER:

### Regional Health & Safety Manager

PHONE: (Office) ( )  
(Pager) ( )

### Director Health & Safety Site Services

Thomas B. Hagadorn  
PHONE: (Office) (800) 782-8805 (x-253)  
(Cell) (908) 413-7976

**“ CHESI Off-Hours phone coverage provided by Central Answering Service ”**

**Telephone 800-282-0058**



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**CLIENT CONTACT:**

**NAME:** David Smith

**TITLE:** VP

**COMPANY:** EXPLO Systems inc.

**PHONE:** 318-382-8434

**REGULATORY AGENCY CONTACTS:**

**FEDERAL CONTACT:**

**NAME:**

**TITLE:**

**AGENCY:**

**PHONE:**

**STATE CONTACT:**

**NAME:** Shelly Hopkins

**TITLE:** State Trooper

**AGENCY:** Louisiana State Police

**PHONE:** 225-925-6113 Cell





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### 13.7 SITE HEALTH AND SAFETY CONTROLS

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The following information has been developed to identify, communicate and minimize the risk of exposure to toxic materials and physical hazards on the job site. This preliminary evaluation identifies anticipated hazards and recommends control measure to minimize recognized hazards. Additional information on hazards should be gathered during site activities and can be added to this document to supplement this plan.

Changes to this plan (i.e. changes in levels of protection, use of alternative controls, additional tasks, etc.) must be approved, by the Director Health and Safety Site Services, prior to initiation or implementation.

<u>TASK</u>	<u>LEVEL OF PROTECTION</u>
1. <u>Clean Road to Project Site</u>	<u>Level D</u>
2. <u>Lay Out Grid Lines</u>	<u>Level D</u>
3. <u>Package material for onsite treatment</u>	<u>Level D</u>
4. <u>Drum Securement &amp; Staging</u>	<u>Level D</u>
5. _____	_____



**Task No. ( 1 )      Clean Road to Work Site**

(Define Task Name)

**This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)**

<b>A</b>	On Site Safety briefing
<b>B</b>	Clear path of debris to project site
<b>C</b>	Remove all trip hazards
<b>D</b>	
<b>E</b>	

**Task No. (1) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_
- Others (not listed on the PHES): \_\_\_\_\_

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:

Insect bites

**Task No. (1) - Work Practices/Engineering Controls**

**To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:**

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other:





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**Task No. (2)      Lay Out Grid Lines**

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(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Use line of sight and flagging to lay out grid pattern delineating work zones.
<b>C</b>	
<b>D</b>	
<b>E</b>	

**Task No. (2) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_
- 

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:

Insect bites

**Task No. (2) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other:





**Task No. (3)**      **Package material as required**  
(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Within grid zones locate propellant/powder under the direction of licensed personnel
<b>C</b>	Wet material as required per instruction from licensed explosive personnel.
<b>D</b>	Place in antistatic bags utilizing only non sparking tools. Only trained and licensed personnel will handle the materials.
<b>E</b>	Place bags of material into drums for disposal by client onsite.

**Task No. (3) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:

Insect bites

**Task No. (3) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other: \_\_\_\_\_

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**Task No. (3) - Personnel Protective Equipment:**

Clean Harbors' Level   D   Personnel Protection shall be utilized and include the following.

- a) ☐ Respirator (Indicate type and facepiece):  
\_\_\_\_\_
- b) ☐ Filter Element (If applicable)  
\_\_\_\_\_
- c) ☒ Glove material FRC (Explosive handlers) Leather for general site work
- d) ☒ Inner gloves
- e) ☒ Steel toe work boots
- f) ☒ Hard hat
- g) ☐ Eye protection; ( ☒ ) Glasses w/side shields, ( ☒ ) Face shield, (Explosive Handlers  
      ☐ ) Splash goggles, ( ☐ ) Dust goggles
- h) ☒ Additional equipment:  
      ☐ Hearing protection (min. NRR29)  
      ☐ Waders-steel toe  
      ☐ Overboots
- i) ☐ Others: >
- j) ☐ Others: > \_\_\_\_\_



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**Task No. (4)      Drum Securement & Staging**

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(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Place lids on drums and ensure all containers are secure.
<b>C</b>	Stage Drums in designated area identified by client.
<b>D</b>	Staged drums will then be turned over to client representatives for destruction/disposal onsite.
<b>E</b>	

**Task No. (4) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_
- 

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:  
Insect bites.

**Task No. (4) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
  - Refer to Physical Hazard Control Sheets
-







**Task No. (5)** \_\_\_\_\_

(Define Task Name)

**This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)**

<b>A</b>	
<b>B</b>	
<b>C</b>	
<b>D</b>	
<b>E</b>	

**Task No. (5) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:

None Anticipated

**Task No. (5) - Work Practices/Engineering Controls**

**To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:**

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other: \_\_\_\_\_



**Task No. (5) - Personnel Protective Equipment:**

Clean Harbors' Level \_\_\_\_\_ Personnel Protection shall be utilized and include the following.

- a) ☐ Respirator (Indicate type and facepiece): \_\_\_\_\_
- b) ☐ Filter Element (If applicable) \_\_\_\_\_
- c) ☐ Coverall material
- d) ☐ Glove material
- e) ☐ Inner gloves
- f) ☐ Steel toe work boots
- g) ☐ Hard hat
- h) ☐ Eye protection; ☐ Glasses w/side shields, ☐ Face shield,  
☐ Splash goggles, ☐ Dust goggles
- i) ☐ Additional equipment:  
☐ Hearing protection (min. NRR29)  
☐ Waders-steel toe  
☐ Overboots
- j) ☐ Others: > \_\_\_\_\_

**In addition, all openings will be securely taped to further reduce the possibility of skin contact.**

If Clean Harbors' Level \_\_\_\_\_ Personnel Protection is deemed necessary, it shall include the following.

- a) ☐ Respirator (Indicate type and facepiece): \_\_\_\_\_
- b) ☐ Filter Element (If applicable) \_\_\_\_\_
- c) ☐ Coverall material
- d) ☐ Glove material
- e) ☐ Inner gloves
- f) ☐ Steel toe work boots
- g) ☐ Hard hat
- h) ☐ Eye protection; ☐ Glasses w/side shields, ☐ Face shield,  
☐ Splash goggles, ☐ Dust goggles
- i) ☐ Additional equipment:  
☐ Hearing protection (min. NRR29)  
☐ Waders-steel toe  
☐ Overboots
- j) ☐ Others: > \_\_\_\_\_

**In addition, all openings will be securely taped to further reduce the possibility of skin**



contact.

### 13.8 PHYSICAL HAZARD EVALUATION SHEET

<u>TASK NUMBER</u>	<u>HAZARD</u>	<u>ACTION</u>
	ABRASIVE BLASTING	Attach Physical Hazard Data Sheet
	BOBCAT LOADER	Attach Physical Hazard Data Sheet
	BONDING & GROUNDING	Attach/Refer to Program
	CHAIN SAW	Attach Physical Hazard Data Sheet
	COLD STRESS	Attach/Refer to Program
	COMPRESSED GAS CYLINDER HANDLING	Attach Physical Hazard Data Sheet
	CONFINED SPACE ENTRY	Attach/Refer to Program
	CONTROL OF HAZARDOUS ENERGY (Lock-out/Tag-Out)	Attach/Refer to Program
	CRANES	Attach Physical Hazard Data Sheet
3&4	DRUM HANDLING	Attach/Refer to Guidance Manual (Chapter I)
	EXCAVATING & TRENCHING	Attach/Refer to Program
	EXCAVATION/BACKHOE	Attach Physical Hazard Data Sheet
	EXPLOSIVE ACTUATED FASTENING DEVICES	Attach Physical Hazard Data Sheet
	FALLING OBJECTS	Attach Physical Hazard Data Sheet
	FLOOR HOLES	Attach Physical Hazard Data Sheet
1 & 3	HAND TOOLS	Attach Physical Hazard Data Sheet
All	HEAT STRESS	Attach/Refer to Program
	HOTSY	Attach Physical Hazard Data Sheet
All	HOUSEKEEPING	Attach Physical Hazard Data Sheet
	HYDRO-BLASTER	Attach Physical Hazard Data Sheet
	INERTING SPACES	Attach Physical Hazard Data Sheet
	LADDERS	Attach Physical Hazard Data Sheet
	LIGHTING	Attach Physical Hazard Data Sheet
All	MANUAL LIFTING	Attach /Refer to Training Program
	MARINE SAFETY	Attach/Complete Checklist
	OVERHEAD WIRES	Attach Physical Hazard Data Sheet
	PERSONNEL LIFTS	Attach Physical Hazard Data Sheet
	PNEUMATIC HAMMER	Attach Physical Hazard Data Sheet
	POWER TOOLS	Attach Physical Hazard Data Sheet
	RIGGING	Attach Physical Hazard Data Sheet
	SCAFFOLDS	Attach Physical Hazard Data Sheet
All	SHARP OBJECTS	Attach Physical Hazard Data Sheet
All	SLIPS, TRIPS, AND FALLS	Attach Physical Hazard Data Sheet
	VACUUM TRUCK OPERATIONS	Attach Physical Hazard Data Sheet
	WELDING, CUTTING, BURNING	Attach Physical Hazard Data Sheet
	WORKING AT ELEVATORS	Attach Physical Hazard Data Sheet
	WORK ZONE TRAFFIC CONTROL	Attach Physical Hazard Data Sheet



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### 13.9 ACTION LEVELS<sup>1</sup>

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#### MAXIMUM CONCENTRATION

<u>SUBSTANCE</u>	<u>LEVEL B<sup>2</sup></u>	<u>Level C<sup>3</sup></u>	<u>PEAK</u>	<u>LEVEL D</u>
Smokless powder				X

Utilizing wetting techniques to dampen the materials it is not anticipated that there will be airborne generation of dusts that would require the use of respiratory protection.

#### NOTES:

- <sup>1</sup> Concentrations are maximums for the Level of Protection. If these concentrations are exceeded, unless addressed below, the level of protection must be upgraded.
- <sup>2</sup> If the airborne levels exceed this concentration, even instantaneously, **STOP WORK IMMEDIATELY** and contact the Regional Health and Safety Manager, Corporate Industrial Hygienist, or the Director Health and Safety Site Services.
- <sup>3</sup> Airborne levels may exceed the Level C limit for up to five (5) minutes so long as the **PEAK MAXIMUM** concentration is not exceeded. This may happen up to three (3) times during any eight (8) hour shift.

**IF: PEAK** is exceeded at any time;

and/or

**LEVEL "C" MAXIMUM** is exceeded more than three (3) times in any one shift;

**THEN: UPGRADE TO LEVEL "B", IMMEDIATELY.**

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### 13.10 WORK ZONES

The Project Manager will determine the specific location and size of the work zones. The decision will be based on the latest available information including scope of work, environmental conditions, site conditions, and direct reading instrument monitoring results. (Refer to Section 5.0 of the Site Specific Plan for Determination Criteria.)

### 13.11 SITE MONITORING

#### 13.11.1 Monitoring Equipment:

PID	_____	DUST MONITOR	_____	FID	_____
MERCURY (JEROME)	_____	for GAS	_____	DETECTOR TUBES	_____
GEIGER	_____	PERSONAL PUMP	_____	OTHER	_____
NOISE	_____				_____

#### 13.11.2 Frequency and Methods of Site Monitoring

The Project Manager is responsible for ensuring air monitoring is conducted and that personnel protection and site integrity are maintained. Air monitoring shall be conducted periodically, and when changes occur in work practices, procedures, locations, or tasks.

The Project Manager shall be responsible for ensuring a daily, site/personnel monitoring log, (using CHI Atmospheric Monitoring Log, or equivalent) is maintained on site.

#### 13.11.3 Documentation

The Project Manager is responsible for assuring that monitoring results are properly obtained, documented and maintained in appropriate locations. Additionally, the Project Manager is responsible for assuring that samples requiring analysis are promptly submitted to Clean Harbors' Analytical Services (CHAS) and sample pumps are post-calibrated.

##### Recording Forms

Atmospheric Monitoring Logs - Used to record direct reading instrument results. The Hazardous Work/Confined Space Entry Permit may also be used for this purpose. Additional sheets or blank sheets may be used if the forms are not sufficient to record all data.

Air Sampling Worksheet - Used to record data for personal exposure monitoring. ALL! information on this form must be completed before submittal to CHAS.

Copies - After monitoring is complete the Project Manager should retain the COLLECTOR COPY and place it in the job folder. The remaining two (2) copies should be submitted to CHAS.

Other Forms - Other forms than those mentioned above, may be used with permission of the Health and Safety Department.



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## **13.12 DECONTAMINATION**

All personnel and equipment leaving the Exclusion Zone must be thoroughly decontaminated before passing to the Support Zone. The Project Manager must designate decontamination stations, as necessary, and continually evaluate and implement the site Specific decontamination procedures.

Based on the associated hazards and levels of protection required with this operation, the following steps shall be followed during the decontamination of personnel and personal protective equipment

**Step 1 - SEGREGATED EQUIPMENT DROP:**

Deposit equipment used on site on plastic drop cloths.

**Step 2 - BOOT COVER, GLOVE, CHEMICAL – RESISTANT COVERALL WASH/RINSE:**

Outer gloves, boot covers, and chemical protective clothing will be rinsed to remove any visible contaminants.

**Step 3 - TAPE REMOVAL:**

Remove tape from around boot covers and outer gloves and deposit in appropriate waste container.

**Step 4 – BOOT COVER AND OUTER GLOVE REMOVAL:**

Remove boot covers, followed by outer glove removal, and deposit in appropriate waste container.

**Step 5 - CHEMICAL RESISTANT SUIT REMOVAL:**

Remove chemical resistant suit and deposit in appropriate waste container.

**Step 6 - RESPIRATOR REMOVAL:**

Remove respirator and place in soap/water solution for further cleaning and decontamination.

**Step 7 - INNER GLOVE REMOVAL:**

Remove inner gloves and place in appropriate waste container.

The Project Manager shall be responsible for establishing the appropriate decontamination stations at which these steps shall be performed. If appropriate, a more comprehensive decontamination procedure will be utilized. Refer to Section 7.0 of the Site Specific Plan for additional steps.



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## **13.13 SITE MAPS**

### **13.13.1 Detailed Site Map:**

Attached is a detailed site map, 8 ½ x 11 ½ , or 8 ½ x 14"). Included on the map are the following.

- 1) Map Orientation, (i.e., N, S, E, & W);
- 2) Anticipated Work Zone locations,  
(i.e., Hot, Decontamination Reduction, etc.)
- 3) Location of all above/below ground utilities;
- 4) Any unusual site features;  
(i.e., cliffs, ditches, streams, etc.)
- 5) If applicable, locations where photos of site were taken;

### **13.13.2 Hospital Route Map:**

Attached is a route map to the nearest hospital, (with directions from the site highlighted), as identified under Key Personnel and Emergency Numbers.





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APPENDIX - A

PLAN APPROVAL AGREEMENT

The following individuals have reviewed the site specific health and safety plan for the Explo systems Inc. ER project. They are responsible for implementing and enforcing the procedures and items covered by this plan. In addition, Clean Harbors' Director Health and Safety Site Services must approve any revisions or alterations to this plan before implementation.

Notify Thomas Hagadorn of any alterations or deviations from the procedures, requirements, etc., listed in this plan,

A handwritten signature in black ink, appearing to read "Thomas B. Hagadorn".

\_\_\_\_\_  
Director Health & Safety

\_\_\_\_\_  
10/17/12

Date:

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Project Supervisor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Branch Manager

\_\_\_\_\_  
Date



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**APPENDIX - B**

**COMPLIANCE AGREEMENTS**

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page   1   of   4



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**APPENDIX - B**

**COMPLIANCE AGREEMENTS**

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page 2 of 4



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**APPENDIX - B**

**COMPLIANCE AGREEMENTS**

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page 3 of 4



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**APPENDIX - B**

**COMPLIANCE AGREEMENTS**

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page 4 of 4



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## APPENDIX - C

### APPROPRIATE MATERIAL SAFETY DATA SHEETS (MSDS)

## Material Safety Data Sheet

### Section 1. Product Information

<b>Product Name:</b>	<b>Unique<sup>®</sup> Smokeless Powder</b>
<b>MSDS Number:</b>	N/A
<b>Product ID#:</b>	N/A
<b>Preparation Date:</b>	Revised 05/11/2010
<b>Business Phone/Hours:</b>	540-639-8143
<b>Emergency Telephone #:</b>	540-639-7323
<b>24 Hr. Spill (Chemtrec):</b>	1-800-424-9300

### Section 2. Composition/Information On Ingredients

<b>Component Name</b>	<b>Common Name</b>	<b>CAS Number</b>
Nitroglycerin	NG	55-63-0
Ethyl Centralite	EC	85-98-3
Diphenylamine	DPA	122-39-4
Nitrocellulose	NC	9004-70-0
Rosin		8050-09-7

### Section 3. Hazard Identification

#### Emergency Overview:

**DANGER! EXTREMELY FLAMMABLE - EXPLOSIVE.**

ACCIDENTAL FIRE OR EXPLOSION IS LIKELY TO CAUSE SEVERE INJURY OR DEATH. DUST MAY CAUSE MODERATE TEMPORARY EYE, SKIN, RESPIRATORY, OR THROAT IRRITATION

<b>Eye:</b>	May cause eye irritation.
<b>Skin:</b>	Absorption through the skin can cause severe headache. May cause allergic skin reaction (sensitization) in susceptible individuals.
<b>Ingestion:</b>	Ingestion may cause severe headache, nausea, vomiting, abdominal pain, fatigue, diarrhea, trembling, ringing in the ears.
<b>Inhalation:</b>	Inhalation of dust or vapor can cause severe headache. Avoid breathing dust, vapor, or mist.
<b>Exposure Symptoms:</b>	Irritation

<b>Cancer Information:</b>	<b>NTP:</b> NA	<b>OSHA:</b> NA	<b>IARC:</b> NA
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#### Section 4. First Aid Measures

<b>Eyes:</b>	Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Render unusable and discard contaminated shoes and leather articles.
<b>Ingestion:</b>	Do Not Induce vomiting. Call a physician or poison control center immediately. NEVER give anything by mouth to an unconscious person. NEVER induce vomiting in an unconscious person.
<b>Inhalation:</b>	Remove to fresh air. If breathing is difficult, give oxygen. Get immediate medical attention.
<b>Doctor Notes:</b>	NA

#### Section 5. Fire Fighting Measures

<b>Flammable Properties:</b>	Flammable EVACUATE AREA IMMEDIATELY. DO NOT fight fire.
<b>Hazardous Decomposition Products:</b>	Oxides of carbon and nitrogen, trace metal oxides
<b>Extinguishing Media:</b>	Deluge with large quantities of water as quickly as possible by automatic sprinklers or fire hose from a protected location.
<b>Protective Equipment:</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire clothing (includes fire fighting helmet, coat, pants, boots, and gloves).
<b>Unusual Fire and Explosion Hazards:</b>	Explosive hazard, may detonate under the right conditions.

#### Section 6. Accidental Release Measures

<b>Spills and Leaks:</b>	Cleanup spills with a soft bristle brush and conductive rubber pan or rubber shovel. Use conductive containers. Avoid pinching material or metal to metal contact. Avoid sharp objects, sand, glass, grit or other material that sensitizes explosives.
<b>Waste Disposal:</b>	Disposal (if explosive) should be carried out under the direct supervision of a qualified person. For industrial disposal, federal hazardous waste regulation allows open burning of explosive waste in permitted facilities. Check with Local authorities before disposal.



## Section 7. Handling Information

**DO NOT PRESSURIZE OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION**

Follow appropriate D.O.D., N.F.P.A. and B.A.T.F. explosive safety measures. Local ordinances may apply.

For handling and storage requirement see 29 CFR 1910.109.

Avoid exposure to sunlight or artificial ultraviolet light.

Do not keep deteriorated or salvaged powders. Check old powders for deterioration regularly.

Destroy deteriorated powders immediately.

## Section 8. Exposure Control Measures / Personal Protection

Component Name	%	CAS #	Applicable Exposure Limits
Nitroglycerin	4.0 – 40%	55-63-0	OSHA – 0.2 ppm (Skin*) ACGIH - 0.05 ppm TLV (Skin*)
Nitrocellulose	Remainder	9004-70-0	Not Established
Diphenylamine	0 – 1%	122-39-4	ACGIH Threshold Limit Value (TLV): 10 mg/m <sup>3</sup> OSHA (TWA) 10 mg/m <sup>3</sup>
Ethyl Centralite	0 – 1%	85-98-3	Not Established
Rosin	0 – 4%	8050-09-7	Not Established

<b>Engineering Controls:</b>	Prevent build-up of static electric charges. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposures limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.
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<b>Respiratory Protection:</b>	Appropriate respiratory protection is required to reduce airborne contaminants, which may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturer's recommendations.
--------------------------------	--

<b>Hand Protection:</b>	Impervious gloves
<b>Eye Protection:</b>	Safety glasses
<b>Hygiene Controls:</b>	Avoid contact with eyes, skin and clothing. Avoid breathing dust, vapor, or mist. Handle in areas with adequate ventilation. Wash thoroughly after handling, and before eating, drinking, or smoking Avoid contamination of food, beverages, or smoking materials. Remove contaminated clothing promptly and clean thoroughly before reuse.

## Section 9. Physical And Chemical Properties

<b>Boiling Point:</b>	NA	<b>Solubility:</b>	Negligible at 20°C
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<b>Melting Point:</b>	NA	<b>Specific Gravity:</b>	1.5 (approximate)
<b>Vapor Pressure:</b>	Negligible at 20°C	<b>pH:</b>	NA
<b>Vapor Density:</b>	NA	<b>Odor:</b>	Odorless
<b>Flash Point:</b>	NA	<b>Appearance:</b>	Small black/gray flakes
<b>Ignition Temp.:</b>	NA		
<b>UEL:</b>	NA		
<b>LEL:</b>	NA		

## Section 10. Stability and Reactivity

<b>Stability:</b>	Stable under recommended handling and storage conditions. Material is sensitive to friction, shock, impact, and electrostatic discharge.
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<b>Incompatibilities:</b>	Acids, oxidizing agents, alkalis and amines and strong sunlight or ultraviolet light.
<b>Conditions to Avoid:</b>	Avoid storing product near incompatible materials. Do not store near flammable materials. Do not keep deteriorated or salvaged product. Keep away from heat, flame sparks and other ignition sources. Do not store in direct sunlight or expose to UV radiation

<b>Hazardous Decomposition Products:</b>	None anticipated under normal or recommended handling and storage conditions.
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## Section 11. Toxicological Information

<p>Component - Diphenylamine: Excessive exposure to dust by inhalation has been reported to cause bladder damage, rapid heartbeat, increased blood pressure, and skin rash.</p> <p>Component - Nitroglycerin: <b>WARNING!</b> Inhalation may cause severe headache. Ingestion may cause severe headache and blood pressure lowering. Absorption through skin may cause severe headache. Repeated skin contact may cause allergic skin reaction (skin sensitization).</p> <p><u>Medical conditions generally recognized as being aggravated by exposure:</u> Severe untreated anemia and glaucoma may be aggravated by extreme overexposure to nitroglycerin in the workplace. Aggravation of these conditions has never been reported as a consequence of workplace exposure but has been reported following protracted medicinal over dosage of nitroglycerin. Alcohol has been reported to intensify any adverse reaction to nitroglycerin.</p> <p>Not listed as a carcinogen by National Toxicity Program (NTP); not regulated as a carcinogen by Occupational Safety and Health Administration (OSHA); not evaluated by International Agency for Research on Cancer (IRAC). Rats dosed for a lifetime showed a <u>decrease</u> in the number of mammary and pituitary tumors that usually occur.</p> <p><b>CARCINOGENICITY/TERATOGENICITY INFORMATION</b></p>
---

**Reported Human Effects:** The effects reported above are only ones that have been reported following workplace exposure. The following additional effects have been reported following medicinal usage or over usage: faintness, skin flush, palpitation, rapid heartbeat, dizziness, abdominal pain, retrosternal discomfort, muscle twitches, Heinz bodies (black spheres in red blood cells), methemoglobinemia, depression, confusion, skin irritation, and allergic skin reaction.

Not teratogenic in rats or rabbits. Inactive in dominant lethal mutagenicity test. No effect on fertility in reproduction test. At many times the dose that would be received following exposure at the TLV, methemoglobinemia and fibrous tissue formation in the bile ducts were seen. Testicular effects were seen in rats dosed for 3 months at over 20,000 times the dose a worker would receive working in the TLV. In lethal dose determination in rats, rapid breathing, poor muscle tone, raised hair and excessive activity were seen.

## Section 12. Ecological Data

No ecological studies were found on this product.

## Section 13. Disposal Considerations

Disposal of material should be in accordance with Federal, State and local regulations.

## Section 14. Transportation Information

<b>U.S. DOT Proper Shipping Name:</b>	Smokeless powder for small arms (100 pounds or less)
<b>UN ID No.:</b>	NA3178
<b>Class &amp; Division:</b>	4.1
<b>Packing Group.:</b>	I

## Section 15. Regulatory Information

OSHA:			
TSCA:	Section 12(b) Listed: X	Unlisted:	Exempt:

<b>CERCLA:</b>	<b>Reportable Quantity: 25 pounds (based on nitroglycerin content)</b>		
<b>SARA Title III:</b>			
<b>Section 302:</b>	<b>Chemical Name: NA</b>		
	<b>Threshold Planning Quantity: NA</b>		
	<b>Reportable Quantity: 25 pounds (CERCLA RQ)</b>		
<b>Section 311/312:</b>	<b>Hazard Class:</b>		
	<input checked="" type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input checked="" type="checkbox"/> Fire <input checked="" type="checkbox"/> Reactive <input checked="" type="checkbox"/> Sudden Release of Pressure		
<b>Section 313:</b>	<b>Chemical Name:</b>	<b>CAS Number/Category Code:</b>	<b>Weight %:</b>
	Nitroglycerin	55-63-0	4.0-40
	Diphenylamine	122-39-4	0-1

<b>Other:</b>	Wastes associated with the propellant portion of this product may be considered RCRA Hazardous Wastes (40 CFR Part 261) (a) because it is listed (P081) due to Nitroglycerin content
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## Section 16. Information Sources

### Label Information:

## DANGER !

### FLAMMABLE/EXPLOSIVE

KEEP AWAY FROM HEAT, SPARKS OR OPEN FLAME

MAY CAUSE SKIN IRRITATION

Residual dust may ignite.

Ingestion may cause nausea, omitting and possible loss of consciousness.

**FIRST AID:** In case of contact, immediately flush skin with water. Remove contaminated clothing and shoes.

Call physician if irritation develops and persists.

**In case of spill:** Use soft natural bristle brush and conductive rubber or conductive plastic shovel and dispose accordingly.

Read product-specific MSDS for more details

### Abbreviation Key:

ACHIH:	American Conference of Governmental Industrial Hygienist
AICS:	Australian Inventory of Chemical Substances
AIHA WEEL:	American Industrial Hygienists Association - Workplace Environmental Exposure Level
ANSI:	American National Safety Institute
C:	Ceiling
CASRN:	Chemical Abstracts Service Registry Number
CERCLA:	Comprehensive Emergency Response, Compensation and Liability Act
DSL:	Domestic Substances List (Canadian)
EIECCS:	European Inventory of Existing Commercial Chemical Substances
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
MITI:	Ministry of International Trade and Industry (Japanese)
N/A:	Not Applicable
NDSL:	Non-domestic Substances List (Canadian)

NFPA:	National Fire Prevention Association
NOR:	Not Otherwise Regulated
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
RCRA:	Resource Conservation and Recovery Act
RQ:	Superfund Amendment Reauthorization Act
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value (ACGIH)
TPQ:	Threshold Planning Quantity
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average

**Disclaimer:**

Although the information contained in this material safety data sheet has been compiled from sources believed to be reliable, no warranty, guaranty or representation is made as to the accuracy or completeness of the information contained herein and no responsibility or liability is assumed regarding the suitability of this information for the user's intended purpose or the consequences of its use. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its obligations under any applicable federal, state, or local law or regulation.

Corporate MSDS Template Version I.doc  
ANSI Z-400.2003  
11/30/05



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### 13.0 SITE SPECIFIC INFORMATION

Site Name: EXPLO Systems, Inc.

Site Location: Minden Army Depot

A handwritten signature in black ink, appearing to be "J. R. Smith", is written over the site location information.

Plan Date: 10-17-12

Revision Date: **\*\*\*\*\*THIS IS AN INITIAL DRAFT PLAN PENDING APPROVAL OF APPROPRIATE GOVERNMENT & STATE AGENCIES.**

Project Summary: Remove explosive residue from Magazine fire

To be conducted for EXPLO Systems Inc  
by Clean Harbors Environmental Services Inc. These activities are proposed to include: clean up operations to include removing unburned smokeless powder, explosive residue. Packaging reactive material and prep for transportation. Clean up operations will use will use a grip sweep to cover the area of contamination

This Site Specific Information has been developed from the latest available information revisions and alterations to this plan may become necessary as further information, (i.e., environmental sampling results, changes in site conditions, changes in scope of work, etc.) , is developed or becomes available. Clean Harbors' Director Health and Safety must approve any proposed changes, before the on-site implementation.

All on-site personnel are required to review and comply with this Health and Safety Plan. It is the responsibility of the Project Manager to ensure this plan is implemented.



### 13.1 SITE HISTORY

13.1.1 Nature of Site: This site is currently being used as an industrial manufacturing facility.

<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial
<input type="checkbox"/> Residential	<input checked="" type="checkbox"/> Rural
	<input type="checkbox"/> Other (SPECIFY)

13.1.2 Use of Site:

<input type="checkbox"/> Manufacturing (Specify products and duration of plant activities)	<input type="checkbox"/> Landfill
<input type="checkbox"/> Residence	<input type="checkbox"/> TSDF
<input type="checkbox"/> Maintenance Facility	<input type="checkbox"/> Gasoline Distributor
	<input checked="" type="checkbox"/> Other (SPECIFY)
	Explosive storage

13.1.3 Reason for Site Mobilization/Activity:

<input type="checkbox"/> Public Complaints	<input type="checkbox"/> Agency Authorized Clean-Up
<input type="checkbox"/> Client Request	<input checked="" type="checkbox"/> Emergency Response
<input type="checkbox"/> Previous Site Research/Investigation	
<input type="checkbox"/> Other (SPECIFY)	

13.1.4 Work Ordered By:

<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Government Agency	<input type="checkbox"/> Other (SPECIFY)

13.1.5 Nature of Problem:

<input type="checkbox"/> Uncontrolled Dumping	<input type="checkbox"/> Leaking Underground Storage Tank
<input type="checkbox"/> Buried Drums	<input type="checkbox"/> Spill
	<input type="checkbox"/> Truck Roll-Over
<input checked="" type="checkbox"/> Other (SPECIFY)	
Explosive storage magazine had a mass fire	



#### 13.1.6 Detailed Site History:

On the evening of October 15<sup>th</sup> 2012 an explosion was reported at the Explo Systems located at Camp Minden which is located in Northwestern Louisiana just outside of the town of Minden, LA. Camp Minden is the site of a former Army ammunition plant. The State of Louisiana took the site over from the federal government in 2005. Explo Systems is a 7-year old, veteran-owned small business located on the former Louisiana Army Ammunition Plant (LAAP). The company specializes in demilitarizing / recovering explosives & propellant. Clean Harbors has been hired to assist in the clean-up resulting from this explosion.





## 13.2 SITE DESCRIPTION

### 13.2.1 General Site Topography:

☐ HILLY ☐ FLAT ☐ MARSHLAND ☒ Other (SPECIFY)  
Heavily wooded area.

### 13.2.2 Affected Area:

☐ URBAN ☒ RURAL ☐ RESIDENTIAL ☐ INDUSTRIAL  
☐ Other (SPECIFY)  
Heavily wooded area

### 13.2.3 Bodies of Water Neighboring Site:

☐ OCEAN ☒ Other (SPECIFY)  
☐ STREAM ☐ RIVER ☐ POND ☐ LAKE ☐ BAY  
Na

### 13.2.4 Approximate Site Size: 1250 feet by 1250 feet

(SPECIFY APPROXIMATE DIMENSIONS IN FEET)

### 13.2.5 Unusual Site Features:

Mass destruction of concrete explosive magazine

(SPECIFY: Process/Utility lines and proximity to site operations; overhead obstructions; Building explosive storage arealocations; Landmarks; etc.)

### 13.2.6 Properties or Operations Abutting (adjacent to) the Site and Current Use: (NOTE: SPECIFY APPROXIMATE DISTANCES TO WORK AREAS)

NORTH: Explosive storage  
SOUTH: Explosive storage  
EAST: Explosive storage  
WEST: Explosive storage



### 13.3 CURRENT SITE STATUS

xx Active        Inactive

#### 13.3.1 Current Site Activities:

CHI OPERATIONS: na

CLIENT OPERATIONS: Explosive storage

GOVERNMENTAL AGENCY OPERATIONS:  
(Specify Agency) Louisiana National Guard Base

ADDITIONAL SITE CONTRACTORS: unknown

### 13.4 SCOPE OF WORK/PROJECT OBJECTIVES

13.4.1 Clean up operations to include removing unburned smokeless powder, explosive residue. Packaging reactive material and prepare for onsite treatment. Clean up operations will use will use a grip sweep to cover the area of contamination.

### 13.5 CONTAMINANTS

#### 13.5.1 Waste Type:

Liquid        Solid x Gas        Sludge        Other       

#### 13.5.2 Waste Characteristics (from Manifest):

CORROSIVE	<u>      </u>	FLAMMABLE	<u>      </u>	EXPLOSIVE	<u>      </u>
COMBUSTIBLE	<u>      </u>	VOLATILE	<u>      </u>	TOXIC	<u>      </u>
REACTIVE	<u>xxx</u>	RADIOACTIVE	<u>      </u>	OTHER	<u>      </u>
UNKNOWN	<u>      </u>				

13.5.3 Containment:

EXCAVATION _____	LAGOON _____	BODY OF WATER _____
TANK _____	DRUMS _____	TANK CAR _____
PIPING _____	ROLL-OFF _____	PROCESS VESSEL _____
SOIL _____	GROUND WATER _____	OTHER _____

13.5.4 Substances of Concern:

Provide a summary of the chemicals Known (x), or Suspected (S) to be present on-site. Indicate Concentrations by laboratory analysis, exposure monitoring results, bulk samples, etc. found in ppm, ppb, mg/l, ug/l, per cent (%), etc.

CONCENTRATION RANGE OF CHEMICALS FOUND:

X or S

CHEMICAL NAME      SOIL    WATER    AIR    (METHOD<sup>1</sup>)

Smokeless powder	x				



### 13.5.5 Exposure Limits:

This table lists the accepted exposure limits of those substances outlined in Contaminants of Concern and Chemicals to be used On-Site. Attach appropriate Material Safety Data Sheets (MSDS) in Appendix C.

CHEMICAL NAME	EXPOSURE LIMITS <sup>1</sup>					
	ACGIH			OSHA		
	TLV	STEL	PEL	STEL	IDLH	IP (eV)
REFER TO ATTACHED MSDS (BALL Powder Propellant) FOR APPROPRIATE SUBSTANCES OF CONCERN AND ESTABLISHED EXPOSURE LEVELS.						

<sup>1</sup>Specify units i.e. ppm; mg/m<sup>3</sup>, etc.

**NOTES: (For 13.5.5)**

<b>a - TLV-TWA</b>	ACGIH, Threshold Limit Value - Time Weighted Average
<b>b - TLV-STEL</b>	ACGIH, Threshold Limit Value - Short Term Exposure Limit
<b>c - PEL-TWA</b>	OSHA, Permissible Exposure Limit - Time Weighted Average
<b>d - PEL-STEL</b>	OSHA, Permissible Exposure Limit - Short Term Exposure Limit
<b>e - IDLH</b>	NIOSH, Immediately Dangerous to Life or Health; a maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.
<b>f - A1</b>	ACGIH, Known Human Carcinogen
<b>g - A2</b>	ACGIH, Suspected Human Carcinogen
<b>h - SKIN</b>	This attention-calling designation refers to the potential contribution to the overall exposure through skin absorption, including mucous membranes and eye, either airborne or through direct contact with the substance.
<b>i - CEILING</b>	ACGIH, The concentration that should not be exceeded during any part of the working exposure.



### 13.5.6 Chemicals Used On-site:

Summarize the chemicals that will be brought to the site and used by CHI Personnel. (Include each product that will be on site, e.g. the decontamination solution, oil/grease for equipment maintenance, etc.). Attach appropriate MSDS in Appendix C.

CHEMICAL NAME	TASK USED FOR	QUANTITY OF CHEMICAL	CONC. OF SOLUTION
unknown			



---

### 13.6 KEY PERSONNEL and EMERGENCY NUMBERS

---

#### Indicate Location:

<u>Minden FD</u>	Fire Department. . . 318-371-4232
<u>Minden</u>	Ambulance Service... 318-382-0380
<u>Military Police</u>	Police Department ....318-382-4171
<u>Hotline</u>	State Police .....877-925-6595

CHEMTREC ..... (800) 424-9300

State Poison Control Cent.....

#### **NEAREST HOSPITAL:**

**NAME:** Minden Medical Hospital

**ADDRESS:** 1 Medical Plaza Place  
Minden La 71055

**PHONE:** 318-377-2321

#### **DIRECTIONS TO HOSPITAL FROM SITE:**

(NOTE: Provide approximate distances in feet, miles, etc. between landmarks.)

1. Head east on Java Rd
2. Take the 1st left to stay on Java Rd
3. Take the 1st left onto 4th St
4. Continue straight onto Burma Rd
5. Turn right onto US-79 N/US-80 E
6. Turn left onto Lewisville Rd
7. Turn left onto Main St

---

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8. Turn right onto Medical Plaza Pl





---

## CLEAN HARBORS OPERATIONS CONTACTS:

Project Manager  
Rexby Stelly

General Manager  
Jerry Mcpheron

PHONE (Cell) 337-256-4007  
(Pager)  
(Home)

PHONE (Cell) 318-401-0666  
(Pager)  
(Home)

## CLEAN HARBORS HEALTH AND SAFETY CONTACTS:

### Site Health and Safety Associate

NAME:  
BRANCH/DIV.  
Telephone: ( )  
PAGER:

### Regional Health & Safety Manager

PHONE: (Office) ( )  
(Pager) ( )

### Director Health & Safety Site Services

Thomas B. Hagadorn  
PHONE: (Office) (800) 782-8805 (x-253)  
(Cell) (908) 413-7976

**“ CHESI Off-Hours phone coverage provided by Central Answering Service ”**

**Telephone 800-282-0058**



---

**CLIENT CONTACT:**

**NAME:** David Smith

**TITLE:** VP

**COMPANY:** EXPLO Systems inc.

**PHONE:** 318-382-8434

**REGULATORY AGENCY CONTACTS:**

**FEDERAL CONTACT:**

**NAME:**

**TITLE:**

**AGENCY:**

**PHONE:**

**STATE CONTACT:**

**NAME:** Shelly Hopkins

**TITLE:** State Trooper

**AGENCY:** Louisiana State Police

**PHONE:** 225-925-6113 Cell



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### 13.7 SITE HEALTH AND SAFETY CONTROLS

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The following information has been developed to identify, communicate and minimize the risk of exposure to toxic materials and physical hazards on the job site. This preliminary evaluation identifies anticipated hazards and recommends control measure to minimize recognized hazards. Additional information on hazards should be gathered during site activities and can be added to this document to supplement this plan.

Changes to this plan (i.e. changes in levels of protection, use of alternative controls, additional tasks, etc.) must be approved, by the Director Health and Safety Site Services, prior to initiation or implementation.

<u>TASK</u>	<u>LEVEL OF PROTECTION</u>
1. <u>Clean Road to Project Site</u>	<u>Level D</u>
2. <u>Lay Out Grid Lines</u>	<u>Level D</u>
3. <u>Package material for onsite treatment</u>	<u>Level D</u>
4. <u>Drum Securement &amp; Staging</u>	<u>Level D</u>
5. _____	_____



**Task No. ( 1 )      Clean Road to Work Site**

(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	On Site Safety briefing
<b>B</b>	Clear path of debris to project site
<b>C</b>	Remove all trip hazards
<b>D</b>	
<b>E</b>	

**Task No. (1) - Hazard Identification:**

CHEMICAL HAZARDS associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

PHYSICAL HAZARDS associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_
- Others (not listed on the PHES): \_\_\_\_\_

BIOLOGICAL HAZARDS associated with this task are anticipated to include:

Insect bites

**Task No. (1) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other:





---

**Task No. (2)      Lay Out Grid Lines**

---

(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Use line of sight and flagging to lay out grid pattern delineating work zones.
<b>C</b>	
<b>D</b>	
<b>E</b>	

Task No. (2) - Hazard Identification:

CHEMICAL HAZARDS associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

PHYSICAL HAZARDS associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_
- 

BIOLOGICAL HAZARDS associated with this task are anticipated to include:

Insect bites

Task No. (2) - Work Practices/Engineering Controls

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other: \_\_\_\_\_



---

**Task No. (2) - Personnel Protective Equipment:**

Clean Harbors' Level     D     Personnel Protection shall be utilized and include the following.

- a)   ( )   Respirator (Indicate type and facepiece):
- b)   ( )   Filter Element (If applicable)
- c)   X   Coverall material   FRC
- d)   X   Glove material   Leather
- e)   ( )   Inner gloves
- f)   X   Steel toe work boots
- g)   ( )   Hard hat
- h)   X   Eye protection; ( x ) Glasses w/side shields, ( ) Face shield,  
         ( ) Splash goggles, ( ) Dust goggles
- i)   )   Additional equipment:  
         ( ) Hearing protection (min. NRR29)  
         ( ) Waders-steel toe  
         ( ) Overboots
- j)   )   Others: > \_\_\_\_\_



**Task No. (3)**      Package material as required  
(Define Task Name)

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Within grid zones locate propellant/powder under the direction of licensed personnel
<b>C</b>	Wet material as required per instruction from licensed explosive personnel.
<b>D</b>	Place in antistatic bags utilizing only non sparking tools. Only trained and licensed personnel will handle the materials.
<b>E</b>	Place bags of material into drums for disposal by client onsite.

**Task No. (3) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:  
Insect bites

**Task No. (3) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other: \_\_\_\_\_







---

**Task No. (4)      Drum Securement & Staging**  
(Define Task Name)

---

This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)

<b>A</b>	Pre-Work detailed safety briefing
<b>B</b>	Place lids on drums and ensure all containers are secure.
<b>C</b>	Stage Drums in designated area identified by client.
<b>D</b>	Staged drums will then be turned over to client representatives for destruction/disposal onsite.
<b>E</b>	

**Task No. (4) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_
- 

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:  
Insect bites.

**Task No. (4) - Work Practices/Engineering Controls**

To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets



- List other:

**Task No. (4) - Personnel Protective Equipment:**

Clean Harbors' Level     D     Personnel Protection shall be utilized and include the following.

- a) ☐ Respirator (Indicate type and facepiece):  
\_\_\_\_\_
- b) ☐ Filter Element (If applicable)
- c) ☒ Coverall material FRC
- d) ☒ Glove material Leather
- e) ☐ Inner gloves
- f) ☒ Steel toe work boots
- g) ☐ Hard hat
- h) ☒ Eye protection: (X) Glasses w/side shields, ( ) Face shield,  
( ) Splash goggles, ( ) Dust goggles
- i) ☐ Additional equipment:  
( ) Hearing protection (min. NRR29)  
( ) Waders-steel toe  
( ) Overboots
- j) ☐ Others: > \_\_\_\_\_



**Task No. (5)** \_\_\_\_\_

(Define Task Name)

**This phase of the operation will include the following steps; (LIST EACH STEP REQUIRED TO COMPLETE THE TASK.)**

<b>A</b>	
<b>B</b>	
<b>C</b>	
<b>D</b>	
<b>E</b>	

**Task No. (5) - Hazard Identification:**

**CHEMICAL HAZARDS** associated with this task are anticipated to include.

- Refer to Section 13.5.4 and 13.5.5
- Refer to Attached Material safety Data Sheets

**PHYSICAL HAZARDS** associated with this task are anticipated to include:

- Complete a Physical Hazard Evaluation Sheet (PHES) and attach appropriate Physical Hazard Data or programs. \_\_\_\_\_

- Others (not listed on the PHES): \_\_\_\_\_

**BIOLOGICAL HAZARDS** associated with this task are anticipated to include:

None Anticipated

**Task No. (5) - Work Practices/Engineering Controls**

**To reduce anticipated hazards described above; on-site personnel shall follow the site specific work practices and engineering controls listed below:**

- Refer to standard Work Practice, Section 9.0
- Refer to Physical Hazard Control Sheets
- List other: \_\_\_\_\_

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---

**Task No. (5) - Personnel Protective Equipment:**

Clean Harbors' Level \_\_\_\_\_ Personnel Protection shall be utilized and include the following.

- a) ☐ Respirator (Indicate type and facepiece): \_\_\_\_\_
- b) ☐ Filter Element (If applicable) \_\_\_\_\_
- c) ☐ Coverall material
- d) ☐ Glove material
- e) ☐ Inner gloves
- f) ☐ Steel toe work boots
- g) ☐ Hard hat
- h) ☐ Eye protection: ☐ Glasses w/side shields, ☐ Face shield,  
☐ Splash goggles, ☐ Dust goggles
- i) ☐ Additional equipment:  
☐ Hearing protection (min. NRR29)  
☐ Waders-steel toe  
☐ Overboots
- j) ☐ Others: > \_\_\_\_\_

**In addition, all openings will be securely taped to further reduce the possibility of skin contact.**

If Clean Harbors' Level \_\_\_\_\_ Personnel Protection is deemed necessary, it shall include the following.

- a) ☐ Respirator (Indicate type and facepiece): \_\_\_\_\_
- b) ☐ Filter Element (If applicable) \_\_\_\_\_
- c) ☐ Coverall material
- d) ☐ Glove material
- e) ☐ Inner gloves
- f) ☐ Steel toe work boots
- g) ☐ Hard hat
- h) ☐ Eye protection: ☐ Glasses w/side shields, ☐ Face shield,  
☐ Splash goggles, ☐ Dust goggles
- i) ☐ Additional equipment:  
☐ Hearing protection (min. NRR29)  
☐ Waders-steel toe  
☐ Overboots
- j) ☐ Others: > \_\_\_\_\_

**In addition, all openings will be securely taped to further reduce the possibility of skin**

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NEXT 10 PAGES

contact.

### 13.8 PHYSICAL HAZARD EVALUATION SHEET

<u>TASK NUMBER</u>	<u>HAZARD</u>	<u>ACTION</u>
	ABRASIVE BLASTING	Attach Physical Hazard Data Sheet
	BOBCAT LOADER	Attach Physical Hazard Data Sheet
	BONDING & GROUNDING	Attach/Refer to Program
	CHAIN SAW	Attach Physical Hazard Data Sheet
	COLD STRESS	Attach/Refer to Program
	COMPRESSED GAS CYLINDER HANDLING	Attach Physical Hazard Data Sheet
	CONFINED SPACE ENTRY	Attach/Refer to Program
	CONTROL OF HAZARDOUS ENERGY (Lock-out/Tag-Out)	Attach/Refer to Program
	CRANES	Attach Physical Hazard Data Sheet
3&4	DRUM HANDLING	Attach/Refer to Guidance Manual (Chapter I)
	EXCAVATING & TRENCHING	Attach/Refer to Program
	EXCAVATION/BACKHOE	Attach Physical Hazard Data Sheet
	EXPLOSIVE ACTUATED FASTENING DEVICES	Attach Physical Hazard Data Sheet
	FALLING OBJECTS	Attach Physical Hazard Data Sheet
	FLOOR HOLES	Attach Physical Hazard Data Sheet
1&3	HAND TOOLS	Attach Physical Hazard Data Sheet
All	HEAT STRESS	Attach/Refer to Program
	HOTSY	Attach Physical Hazard Data Sheet
All	HOUSEKEEPING	Attach Physical Hazard Data Sheet
	HYDRO-BLASTER	Attach Physical Hazard Data Sheet
	INERTING SPACES	Attach Physical Hazard Data Sheet
	LADDERS	Attach Physical Hazard Data Sheet
	LIGHTING	Attach Physical Hazard Data Sheet
All	MANUAL LIFTING	Attach /Refer to Training Program
	MARINE SAFETY	Attach/Complete Checklist
	OVERHEAD WIRES	Attach Physical Hazard Data Sheet
	PERSONNEL LIFTS	Attach Physical Hazard Data Sheet
	PNEUMATIC HAMMER	Attach Physical Hazard Data Sheet
	POWER TOOLS	Attach Physical Hazard Data Sheet
	RIGGING	Attach Physical Hazard Data Sheet
	SCAFFOLDS	Attach Physical Hazard Data Sheet
All	SHARP OBJECTS	Attach Physical Hazard Data Sheet
All	SLIPS, TRIPS, AND FALLS	Attach Physical Hazard Data Sheet
	VACUUM TRUCK OPERATIONS	Attach Physical Hazard Data Sheet
	WELDING, CUTTING, BURNING	Attach Physical Hazard Data Sheet
	WORKING AT ELEVATORS	Attach Physical Hazard Data Sheet
	WORK ZONE TRAFFIC CONTROL	Attach Physical Hazard Data Sheet

### 13.9 ACTION LEVELS<sup>1</sup>

#### MAXIMUM CONCENTRATION

<u>SUBSTANCE</u>	<u>LEVEL B<sup>2</sup></u>	<u>Level C<sup>3</sup></u>	<u>PEAK</u>	<u>LEVEL D</u>
Smokless powder .				X

**Utilizing wetting techniques to dampen the materials it is not anticipated that there will be airborne generation of dusts that would require the use of respiratory protection.**

#### NOTES:

<sup>1</sup> Concentrations are maximums for the Level of Protection. If these concentrations are exceeded, unless addressed below, the level of protection must be upgraded.

<sup>2</sup> If the airborne levels exceed this concentration, even instantaneously, **STOP WORK IMMEDIATELY** and contact the Regional Health and Safety Manager, Corporate Industrial Hygienist, or the Director Health and Safety Site Services.

<sup>3</sup> Airborne levels may exceed the Level C limit for up to five (5) minutes so long as the **PEAK MAXIMUM** concentration is not exceeded. This may happen up to three (3) times during any eight (8) hour shift.

**IF: PEAK** is exceeded at any time;

and/or

**LEVEL "C" MAXIMUM** is exceeded more than three (3) times in any one shift;

**THEN: UPGRADE TO LEVEL "B", IMMEDIATELY.**

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### 13.10 WORK ZONES

The Project Manager will determine the specific location and size of the work zones. The decision will be based on the latest available information including scope of work, environmental conditions, site conditions, and direct reading instrument monitoring results. (Refer to Section 5.0 of the Site Specific Plan for Determination Criteria.)

### 13.11 SITE MONITORING

#### 13.11.1 Monitoring Equipment:

PID	_____	DUST MONITOR	_____	FID	_____
MERCURY (JEROME)	_____	for GAS	_____	DETECTOR TUBES	_____
GEIGER	_____	PERSONAL PUMP	_____	OTHER	_____
NOISE	_____				

#### 13.11.2 Frequency and Methods of Site Monitoring

The Project Manager is responsible for ensuring air monitoring is conducted and that personnel protection and site integrity are maintained. Air monitoring shall be conducted periodically, and when changes occur in work practices, procedures, locations, or tasks.

The Project Manager shall be responsible for ensuring a daily, site/personnel monitoring log, (using CHH Atmospheric Monitoring Log, or equivalent) is maintained on site.

#### 13.11.3 Documentation

The Project Manager is responsible for assuring that monitoring results are properly obtained, documented and maintained in appropriate locations. Additionally, the Project Manager is responsible for assuring that samples requiring analysis are promptly submitted to Clean Harbors' Analytical Services (CHAS) and sample pumps are post-calibrated.

##### Recording Forms

Atmospheric Monitoring Logs - Used to record direct reading instrument results. The Hazardous Work/Confined Space Entry Permit may also be used for this purpose. Additional sheets or blank sheets may be used if the forms are not sufficient to record all data.

Air Sampling Worksheet - Used to record data for personal exposure monitoring. ALL! information on this form must be completed before submittal to CHAS.

Copies - After monitoring is complete the Project Manager should retain the COLLECTOR COPY and place it in the job folder. The remaining two (2) copies should be submitted to CHAS.

Other Forms - Other forms than those mentioned above, may be used with permission of the Health and Safety Department.

---

### **13.12 DECONTAMINATION**

All personnel and equipment leaving the Exclusion Zone must be thoroughly decontaminated before passing to the Support Zone. The Project Manager must designate decontamination stations, as necessary, and continually evaluate and implement the site Specific decontamination procedures.

Based on the associated hazards and levels of protection required with this operation, the following steps shall be followed during the decontamination of personnel and personal protective equipment

**Step 1 - SEGREGATED EQUIPMENT DROP:**

Deposit equipment used on site on plastic drop cloths.

**Step 2 - BOOT COVER, GLOVE, CHEMICAL – RESISTANT COVERALL WASH/RINSE:**

Outer gloves, boot covers, and chemical protective clothing will be rinsed to remove any visible contaminants.

**Step 3 - TAPE REMOVAL:**

Remove tape from around boot covers and outer gloves and deposit in appropriate waste container.

**Step 4 – BOOT COVER AND OUTER GLOVE REMOVAL:**

Remove boot covers, followed by outer glove removal, and deposit in appropriate waste container.

**Step 5 - CHEMICAL RESISTANT SUIT REMOVAL:**

Remove chemical resistant suit and deposit in appropriate waste container.

**Step 6 - RESPIRATOR REMOVAL:**

Remove respirator and place in soap/water solution for further cleaning and decontamination.

**Step 7 - INNER GLOVE REMOVAL:**

Remove inner gloves and place in appropriate waste container.

The Project Manager shall be responsible for establishing the appropriate decontamination stations at which these steps shall be performed. If appropriate, a more comprehensive decontamination procedure will be utilized. Refer to Section 7.0 of the Site Specific Plan for additional steps.





---

### 13.13 SITE MAPS

#### 13.13.1 Detailed Site Map:

Attached is a detailed site map, 8 1/2 x 11 1/2, or 8 1/2 x 14"). Included on the map are the following:

- 1) Map Orientation, (i.e., N, S, E, & W);
- 2) Anticipated **Work Zone** locations,  
(i.e., Hot Decontamination Reduction, etc.)
- 3) Location of all above/below ground utilities;
- 4) Any unusual site features;  
(i.e., ditches, streams, etc.)
- 5) If applicable, locations where photos of site were taken;

#### 13.13.2 Hospital Route Map:

Attached is a route map to the nearest hospital, (with directions from the site highlighted) as identified under **Key Personnel and Emergency Numbers**.



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APPENDIX - A

PLAN APPROVAL AGREEMENT

The following individuals have reviewed the site specific health and safety plan for the Explo systems Inc. ER project. They are responsible for implementing and enforcing the procedures and items covered by this plan. In addition, Clean Harbors' Director Health and Safety Site Services must approve any revisions or alterations to this plan before implementation.

Notify Thomas Hagadorn of any alterations or deviations from the procedures, requirements, etc., listed in this plan,

A handwritten signature in black ink, appearing to read "Thomas B. Hagadorn".

---

Director Health & Safety

11/17/12

Date:

---

Project Manager

Date:

---

Project Supervisor

Date:

---

Branch Manager

Date:



---

## APPENDIX - B

### COMPLIANCE AGREEMENTS

All on-site personnel (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page \_\_\_1\_\_\_ of \_\_\_4\_\_\_



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APPENDIX - B

COMPLIANCE AGREEMENTS

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Expo Systems Inc. project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH

Page 1 of 4





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## APPENDIX - B

### COMPLIANCE AGREEMENTS

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the Explo Systems Inc. ER project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page   3   of   4



## APPENDIX - B

### COMPLIANCE AGREEMENTS

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete this section before the commencement of site activities for the Expo Systems installation project.

I have read and understand the contents of this site specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page 34 of 4





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## APPENDIX - C

### APPROPRIATE MATERIAL SAFETY DATA SHEETS (MSDS)